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# BULLETIN

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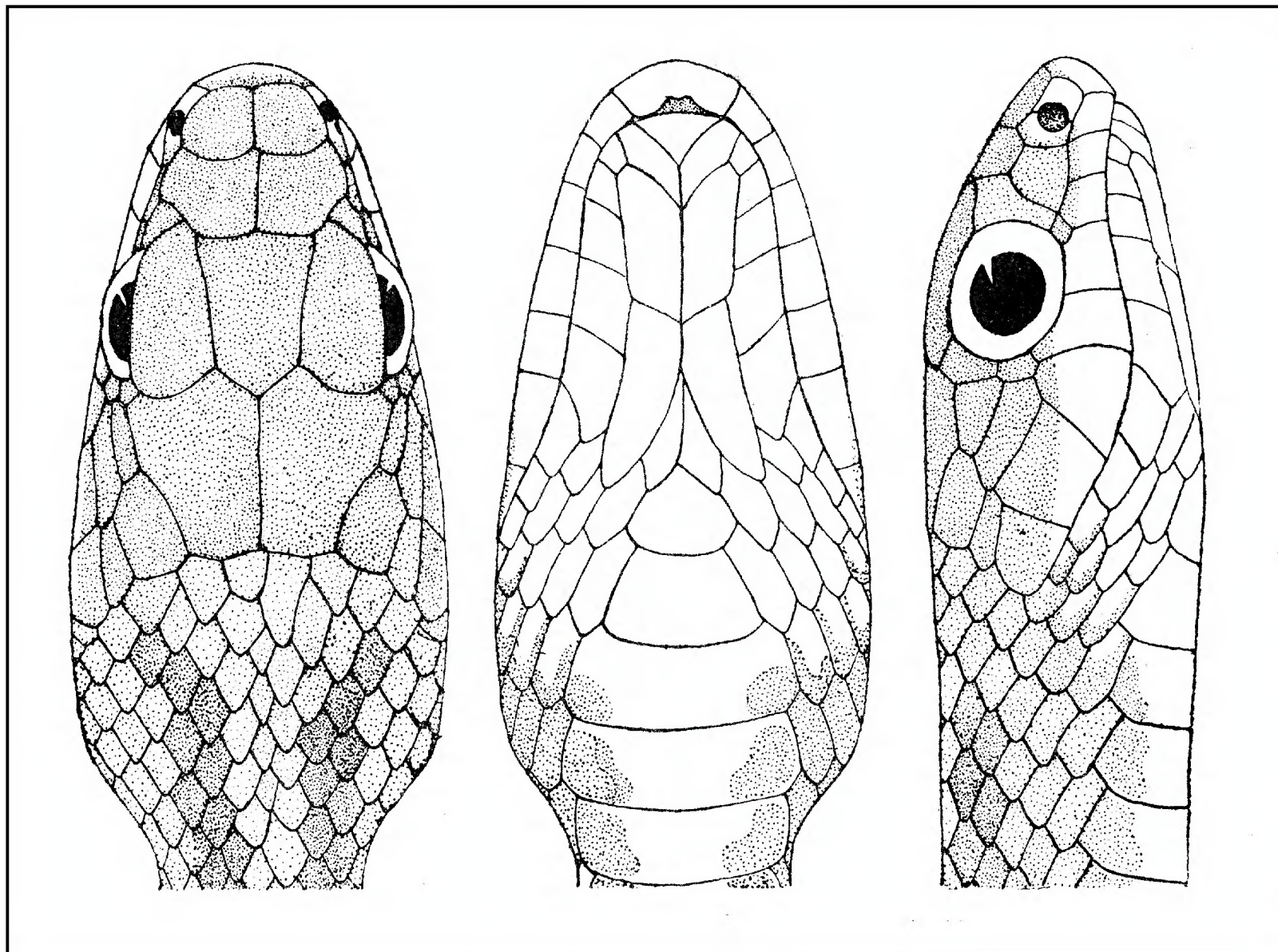
# Chicago Herpetological Society

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Volume 50, Number 1  
January 2015



# BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY

## Volume 50, Number 1

### January 2015

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**Cover:** Big-eyed ratsnake, *Ptyas dhumnades*. Drawing (as *Zaocys nigromarginatus oshimai*) from *A Monograph of the Snakes of Japan* by Moichiro Maki, 1931.

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**Notes on Mexican Herpetofauna 24:  
Unusual Food Items in the Diet of the American Black Bear, *Ursus americanus eremicus*  
(Pallas, 1780), in Parque Ecológico de Chipinque, Nuevo León, Mexico**

**Alejandra Rodríguez-Jaime<sup>1</sup>, David Lazcano<sup>2</sup>, Javier Banda-Leal<sup>2</sup> and Manuel Neveras de los Reyes<sup>2</sup>**

**Abstract**

In 2013 we studied the diet of the American black bear, *Ursus americanus eremicus*, in Parque Ecológico Chipinque. An analysis of 64 scats revealed the remains of scales from two different species of lizards in one sample. These turned out to be *Sceloporus grammicus disparilis* and *Scincella silvicola caudaequinae*. These two food items had not previously been documented, thus increasing the list of animal material consumed by black bears.

**Resumen**

Cuando se estudiaba la dieta del *Ursus americanus eremicus* en el Parque Ecológico Chipinque durante el año de 2013, después de analizar 64 heces fecales de los osos se encontró en una de las nuestras escamas de dos especies de lagartijas que resultaron ser: *Sceloporus grammicus disparilis* y *Scincella silvicola caudaequinae*, resultando ser este un evento no antes documentado. Incrementando de esta manera la lista de material animal consumido por el oso negro.

**Introduction**

*Information on the Black Bear*

*Ursus americanus* is placed in the family Ursidae, and the species has 16 recognized subspecies (Hall, 1981) two of which are found in Mexico: *Ursus americanus eremicus* and *Ursus americanus machetes* (Ramírez-Pulido et al., 1996; Moctezuma-Orozco, 1997; Moctezuma-Orozco and Doan-Crider, 2005). Other authors report three Mexican subspecies, *U. a. amblyceps*, *U. a. eremicus* and *U. a. machetes* (Hall, 1981; Doan-Crider and Hellgren, 1996). The black bear is considered one of largest carnivores in Mexico; it has a robust body, short tail, and small round ears, and its length can reach up to 2 m. Body weight ranges between 90 and 216 kg, depending on the geographic location and the availability of food items; females are approximately 20% smaller than males (Ford, 1981; Herrero, 1985; Novak, 1991). It is an animal that is plantigrade, pentadactyl, with recurved, non-retractile claws (Pelton et al., 1999). It has short, straight hair (Anderson, 1972: pp. 377-378). It can be black, brownish-black or cinnamon brown. This species has a very large daily activity area, in males it is estimated between 30 to 120 km<sup>2</sup>, while in females it is between 10 and 30 km<sup>2</sup>. Home ranges regularly overlap (Leopold, 1959; Rogers, 1977; Doan-Crider, 1995, 2003; Auger et al., 2002; McKinney and Delgadillo, 2004).

*Distribution of the Black Bear*

The natural distribution of the black bear (*Ursus americanus*) covers much of North America, from Alaska to northern Mexico (Hall, 1981). In Mexico, *U. a. amblyceps* is distributed in the central and northern region of the states of Sonora and Chihuahua; *U. a. machetes* in southern and southwest Chihuahua, Durango, southern Sinaloa and northwest Zacatecas; and *U. a. eremicus* in the states of Coahuila, Nuevo León, Tamaulipas,

Zacatecas and San Luis Potosí (Anderson, loc. cit.; Hall, 1981). Their original range has been reduced by 80% and now only can be found in the north of the country. Its current distribution is from Canada down to some areas of Mexico in the Sierra Madre Occidental of Sonora and Chihuahua (Gonzalez-Romero et al., 2003, Calderón-Dominguez et al., 2006) and in the Sierra Madre Oriental in the mountain ranges of the Sierra del Burro (Doan-Crider, 2003) and Maderas del Carmen, Coahuila, (Pelton et al., 1999). Currently the southern limit of their distribution in our country is not well defined.

In Mexico, the species is considered at high risk as a result of destruction and drastic modification of habitat, disease, over-exploitation, predation and human activities, among other reasons, so it is now protected by the Norma Oficial Mexicana, under the category "species in danger of extinction." (SEMARNAT, 2010)



A male black bear, *Ursus americanus eremicus*, in Parque Ecológico de Chipinque. Photograph by Alejandra Rodríguez-Jaime.

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### Diet of the Black Bear

Black bears belong to the order Carnivora, but their eating habits place them as frugivores/omnivores (Frisch-Jordan, 1995), since they feed on virtually all types of edible matter, depending on the time of year. In North America, researchers agree that on average 80% of their diet is of vegetable origin (Hellgren and Vaughan, 1988; Hellgren, 1991; McClinton et al., 1992). The remaining 20% of the diet is of animal origin, comprising carrion, fish, insects, honey and small mammals.

Among the main plant species consumed by bears are acorns of (*Quercus* spp.), fruit of *Rhus* spp., Madrone/Madroño (*Arbutus xalapensis*), Virginia Bird Cherry/Cerezo de Virginia (*Prunus virginiana*), Wild Grapes/*Moras Silvestres* (*Vitis* spp.), Prickly Pears/*Tunas* (*Opuntia* spp.), succulent leaves of different plants like Sotol/Sotol (*Dasylirion* sp.) and Yucca/Yucca (*Yucca* sp.). Animal food items include certain insects, especially ants, small rodents and fish (Doan-Crider, 1995; SEMARNAP, 1999). Other occasional components of the diet are bird's eggs, carrion, and even the meat of medium and large animals (Baker, 1956; Fair, 1990; Ford, 1981; Herrero, 1985; Leopold, 1977: pp. 467-473). In addition, they feed on game species (Niño-Ramirez, 1989) such as white-tailed deer (*Odocoileus virginianus texanus*), and in extreme drought conditions they will attack domestic animals such as foals, goats and sheep (Jimenez-Guzmán et al., 1999). Dobey et al. (2005) extensively documented the ecology of black bears in Florida, and mention that 97% of the diet is of plant origin and a very small percentage is of animal origin including: ants, roaches, wasps, beeswax and others, but curiously they include reptile eggs.

In a study carried out in Sierra de Picachos, Nuevo León (Morales-Montemayor, 2008), a mountain range northeast of the Monterrey Metropolitan Area, the authors estimated that the diet of black bears during autumn–winter (2005–2006) was 92% of plant origin and 8% of animal origin. The main food items were found to be the Texas caqui/caqui Mexicano (*Diospyros texana*) and Engelmann prickly pear/higuera de pala (*Opuntia engelmannii*). They are active predators and their diet is high in carbohydrates but low in protein and fat.

### Information concerning food items / prey items

Northeastern graphic lizards (*Sceloporus grammicus disparilis*) are diurnal. They can be found climbing on rock walls



A male *Sceloporus grammicus disparilis* basking on a rock. Photograph by Mike S. Price

or tree bark where the lizards are camouflaged with the environment. In addition, they can drastically change color in the different habitats and altitudes; they can become almost completely dark in coloration, facilitating capture of sunlight and quickly heating up; due to this adaptation, they are usually the first lizards to become active in the morning. The bodies heat up at low altitudes faster, but in the high sierras where this phenomenon of heating takes place they tend to be darker, allowing them to survive in the colder environment. This is perhaps one of the most studied lizards in Mexico.

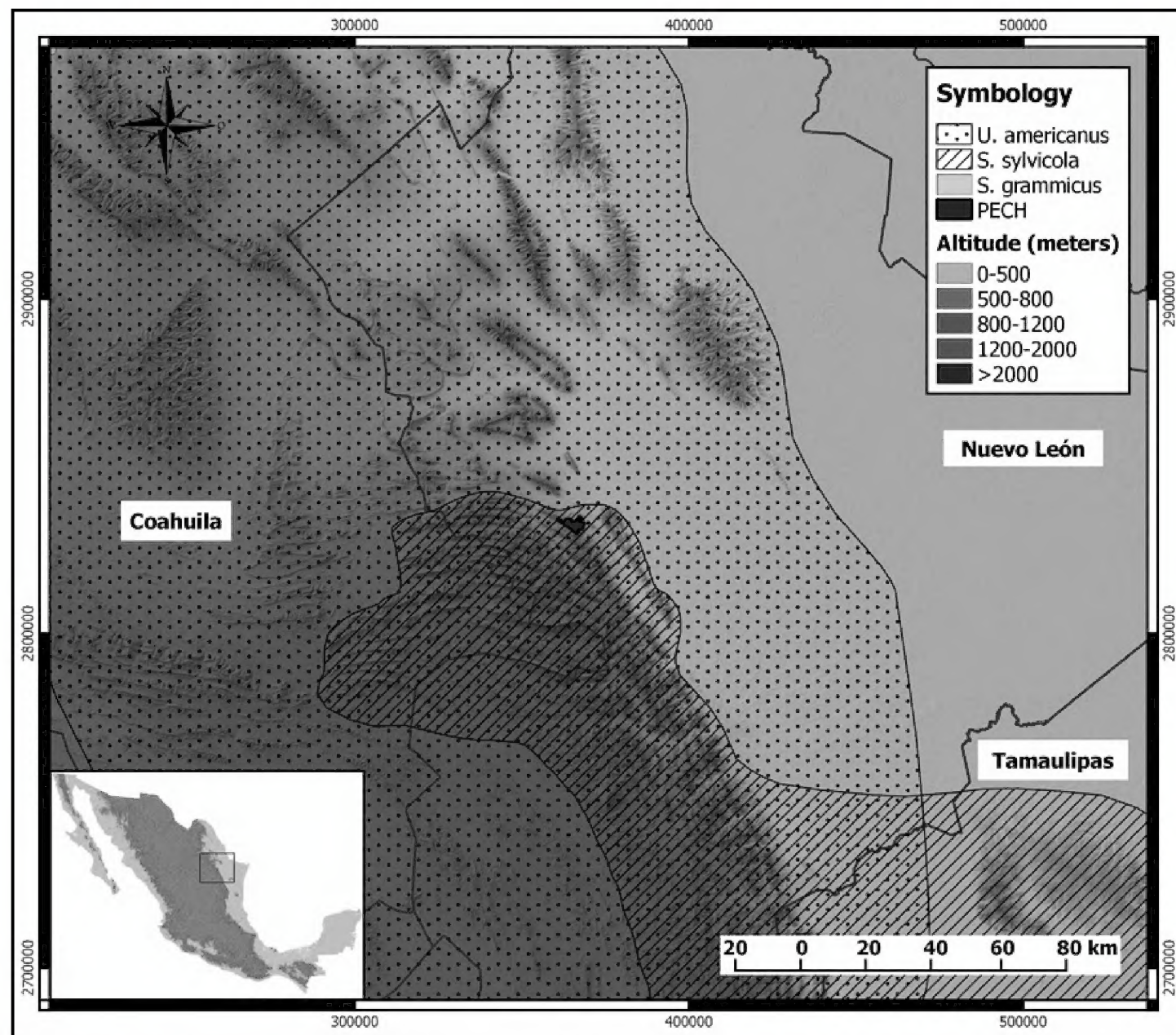
Their diet is composed mainly of insects and other invertebrates. There are interesting reports of predation on this species by snakes. For example, Uribe-Peña et al. (1999) documented that dwarf rattlesnakes (*Crotalus ravus*) and other snake species consume this species frequently where they are sympatric. Lazcano et al. (2004) documented that the Tamaulipan rock rattlesnake (*Crotalus lepidus morulus*) is also a predator of this species. Cannibalism is frequent among many species of lizards, and this species is not an exception (Luiselli et al., 1999; Leyte-Manrique et al., 2005, 2006). Aspects of the reproductive cycle have been documented (Ramírez-Bautista et al., 2005, 2006; Jimenez-Cruz et al., 2005). Reproduction is viviparous.

A detail that we have observed in the field (in Sierra San Antonio Peña Nevada) is that the offspring of *S. g. disparilis* are born at the same time of year as the offspring of its predators, *C. l. morulus* and the twin-spotted rattlesnake (*Crotalus pricei miquihuanus*). The offspring of this lizard weigh 0.3–0.4 g, whereas the neonates of *C. l. morulus* weigh 2.45–6.56 g, and of *C. p. miquihuanus*, 2.30–3.50 g (Lazcano, 2005). An excellent adaptation to the feeding cycle of this community in particular. The lizards are an important source of food in the diet of a variety of mammals, birds and reptiles.

Their habitat is semi-arid areas, xerophytic scrub, *izotales* [*Yucca* tree forests], mesquites, submontane scrubland and oak/pine forests. In Sierra San Antonio Peña Nevada in Zaragoza, Nuevo León, they were abundant in the chaparral forest where the most common plant elements here were agaves (*Agave americana*, *A. gentryi*, *A. lecheguilla* and *A. montana*), and activity was frequently observed (Lazcano, 2005). Importantly, this area is inhabited by a stable population of black bears. The general distribution of *S. g. disparilis* in Mexico is Coahuila, Nuevo León, Tamaulipas, San Luis Potosi and Zacatecas,



A male *Scincella silvicola caudaequinae* amid leaf and rock litter. Photograph by Toby Hibbitts



Distribution of *Scincella sylvicola*, *Sceloporus grammicus* and *Ursus americanus* with respect to the state of Nuevo León and the study site (PECH). Map by Javier Banda-Leal.

an area inhabited by *U. a. eremicus*. The lizard's altitudinal range is from sea level to 2400 m. Their status in NOM-059-SEMARNAT-2010: None; Endemic in Mexico. By IUCN they are classified as: LC (Least Concern). Additional general information on the species can be found in Lemos-Espinal and Smith (2007).

The other prey item we noted was the Horsetail Falls ground skink (*Scincella sylvicola caudaequinae*). The body color is light brown or golden. A more or less dark line of scales arises behind the nose, passes through the eye and over the ear, along the entire side of the body. Under this line the body is light. The tail is the color of the body, golden or light brown. The broad dark lateral line narrows and extends to the tip of the tail. The limbs are small, brown as the body with small dark brown spots similar in color to the lateral line. The limbs are white or light-colored on the ventral side. The head is wide at the base and of the same color as the body; the lip scales have small dark spots; and the throat and neck are light or white. The adults have a total length between 7.5 to 14.5 mm. This length varies greatly depending on the population.

These skinks are diurnal, and can be found beneath rocks or logs, or underground. When active they can be found on the surface in the leaf litter. They feed on small invertebrates such as spiders, insects and larvae. They are commonly found in oak /pine forest and tropical humid gallery forest with abundant leaf litter in the states of Hidalgo, Nuevo León, Queretaro, San Luis Potosí, Tamaulipas, and northern Veracruz. They were frequently observed in the study site. They lay eggs during the spring and are born in the summer. They are found at altitudes

from 50 to 1720 m. Their status in NOM-059-SEMARNAT-2010: Threatened; Endemic for México. By the IUCN they are classified as: LC (Least Concern). Additional general information on the species can be found in Lemos-Espinal and Dixon (2013). Reproduction is oviparous.

### Study Site

Parque Ecológico Chipinque (PECh) is located in the municipalities of San Pedro Garza Garcia and Monterrey in the state of Nuevo León, Mexico, bordering metropolitan Monterrey on the southwest. The park has an area of 1625 ha and is part of the Parque Nacional Cumbres de Monterrey, located in the Sierra Madre Oriental. It has elevations ranging from 600 to 2200 meters ("Copete de Águilas" = "Eagles Crest" is the highest elevation) and with a very abrupt topography. It is located between 25°33' and 25°35' N latitude, and between 100°18' and 100°24' W longitude.

Soil types present are lithosol and rendzins. It has a dry climate, with rains in summer, and winter rainfall between 5 and 10% of the annual total. Average annual temperature is between 18 and 22°C and the average annual precipitation ranges from 300 to 500 mm.

Biotic plant communities in PECh and frequent plant species found in them: 1) Submontane Scrub biotic plant community: Barreta (*Helietta parvifolia*), Texas Olive/*Anacahuíta* (*Cordia boissieri*), Ape's Earring/*Tenaza* (*Pithecellobium pallens*), Blackbrush Acacia/*Chaparro Prieto* (*Acacia rigidula*), Sweet Acacia/*Huizache* (*Acacia farnesiana*), Mexican Holdback/



A panoramic view of montane habitat in Parque Ecológico de Chipinque. Photograph by Alejandra Rodríguez-Jaime.

*Hierba del Potro* (*Caesalpinia mexicana*), Honey Mesquite/*Mezquite* (*Prosopis glandulosa*). 2) Desert Scrub rosetophilous biotic plant community: *Lechuguilla* (*Agave lechuguilla*), Wax Plant/*Candelilla* (*Euphorbia antisiphylitica*), Mexican Rubber/*Guayule* (*Parthenium argentatum*), Giant Spanish Dagger/*Palma Samandoca* (*Yucca carnerosana*). 3) Oak-Pine biotic plant community: Compton Mexican Loquat-leaf Oak/*Encino de Asta* (*Quercus rysophylla*), Mexican White Oak/*Encino Blanco* (*Q. polymorpha*), Lacey Oak/*Encino Memelito* (*Q. laceyi*), Live Oak/*Encino Molino* (*Q. virginiana* var. *fusiformis*), Canby Oak/*Encino Duraznillo* (*Q. canbyi*), White Oak/*Encino Blanco* (*Q. laeta*), Madrone/*Madroño* (*Arbutus xalapensis*), American Cherry/*Cerezo Negro* (*Prunus serotina*) and Mexican Walnut/*Nogal Encarcelado* (*Juglans mollis*). 4) Pine-Oak biotic plant community: Twisted-leaf Pine/*Pino Colorado* (*Pinus teocote*) and White Pine/*Pino Blanco* (*Pinus pseudostrobus*).

## Materials and Methods

Samples were taken in PECh once a week from January to December 2013. Scat samples were collected in paper bags and georeferenced, they were left to dry in cartons under an infrared light bulb, after drying they were again kept in paper bags. All samples were placed inside small chiffon pockets and washed with detergent and water; they were again left to dry and subsequently viewed under a stereomicroscope and separated. Each nutritional component was identified to the nearest possible taxon.



A Submontane Scrub biotic plant community in Parque Ecológico Chipinque. Photograph by Alejandra Rodríguez-Jaime.

## Results

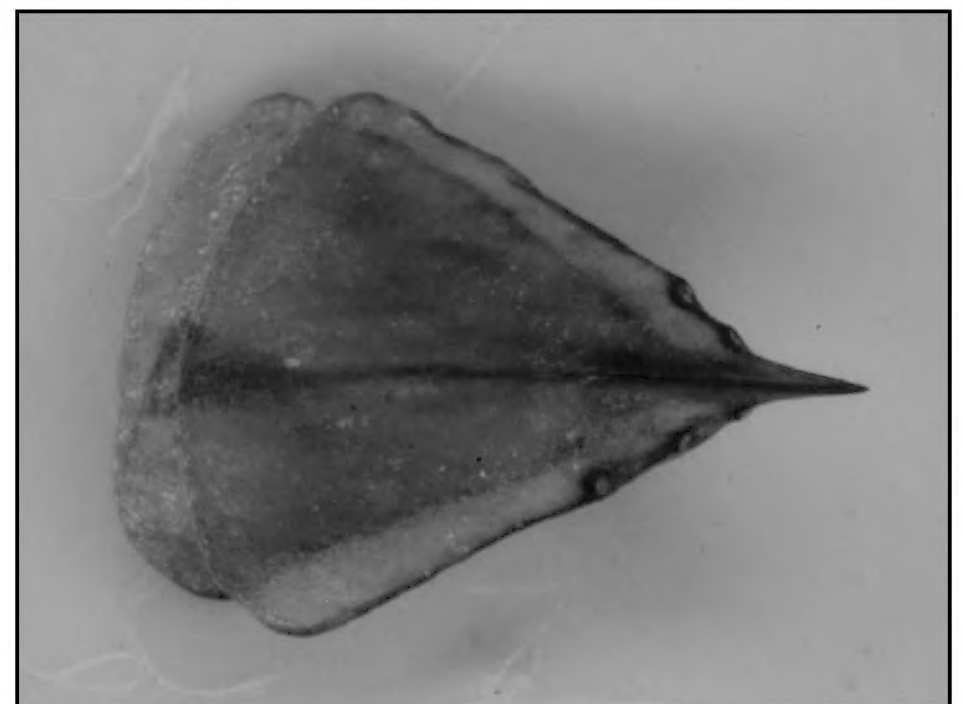
While conducting a survey on the activity and diet of black bears in the PECh, we sampled 64 scats during the months January–December 2013, which were analyzed according to the method described above. Main food items found were plant seeds such as Pearls of the Virgin/*Perlas de la Virgen* (*Chiococca pachyphylla*), Mexican Cancer Root/*Yerba del Cáncer* (*Conopholis mexicana*), Wild Berries/*Moras Silvestres* (*Vitis* sp.), Texas Persimmon/*Parsimonio Texano* (*Diospyros texana*) and Smooth Sumac/*Zumaque* (*Rhus* sp.) (Rodríguez-Jaime, 2015).

During this collecting period one scat contained remains in the form of scales of two different species: Horsetail Falls Ground Skink (*Scincella silvicola caudaequinae*) and Northeastern Graphis Lizard (*Sceloporus grammicus disparilis*). Mexican Cancer Root seeds were also found. The sample was collected on 19 May 2013 (coordinates: 25°36'2.3"N and 100°20'53.3"W, elevation 1278 m).

## Discussion and Conclusion

We observed the following characteristics of the sample containing the lizard remains.

Remains of *Sceloporus grammicus disparilis*: Dorsal and tail scales were found. Dorsal scales were wider than long, the keels on the scales were well pronounced extending throughout the scale, the tip long and straight. Other lizard species in the area of



A dorsal tail scale from *Sceloporus grammicus disparilis*. Photograph by Carlos Solís-Rojas

PECh (see Lazcano et al., 2006) do not have these scale features. The other phrynosomatid species present, such as the *S. torquatus* group, do not have pronounced tips and keels do not cross the entire scale or are not so pronounced. In *S. olivaceus* the keels do not extend throughout the scales; in the *S. parvus* group the scales are elongated and thin. So it was diagnosed that scales belong to *S. g. disparilis*.

Remains of *Scincella silvicola caudaequinae*: Initially, smooth body scales were found that made this more feasible for *Plestiodon*; after carefully analyzing the structure of the scales, we found an interparietal scale that was very thin and elongated. Comparing it with *Plestiodon* and *Scincella*, it corresponded to the genus *Scincella*, because the interparietal scales in *Plestiodon* are much wider and rough, while in the *Scincella* specimens all the scales were thin and elongated. There was also a thin and fine supraocular scale, which corresponds to *Scincella*, not to *Plestiodon*. The two genera are sympatric in the area.

Most bears are omnivorous, opportunistic feeders, whose diets can vary seasonally, yearly, geographically, and by habitat. These variables, along with differences in investigative methodology, confound attempts to make generalizations and comparisons of their diet (Hellgren and Vaughan, 1988; Hellgren, 1991; Hwang et al., 2002; McClinton et al., 1992; Morales-Montemayor, 2008).

Ample literature records mention the diet of the black bear. But the consumption of herpetofauna has been rarely reported, except by Dobey et al. (2005), who documented the consumption of reptile eggs in the Florida black bear, and Hwang et al. (2002) that mentioned that an Asian black bear, *Ursus thibetanus*, consumed a snake, but did not identify the particular species.

How these particular lizards were consumed as two specific food items is difficult to clarify, because the two lizards have different field activity: *S. g. disparilis* is a rock wall or arboreal dweller above the ground, and *S. s. caudaequinae* is a ground dweller. Perhaps the black bear that was foraging or digging up its food items came across these particular lizards that were using the ground as a refuge area.

### Acknowledgments

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## Herpetology 2015

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

### CAPTIVE CHINESE GIANT SALAMANDERS

L. Zhang et al. [2014, *Herpetologica* 70(4):369-377] note that Chinese giant salamanders (*Andrias davidianus*) have experienced an 80% population decline since the 1950s. Captive salamander farms in China might provide a source population for reintroduction projects involving this species. To provide recommendations on rearing individuals for reintroduction, the authors studied the effect of water temperature on the growth of captive-reared juvenile (2–6 yr) *A. davidianus* and compared their body condition with wild specimens. They reared 240 salamanders in two groups, exposed them to different water temperatures for 7 mo, and monitored their growth over the next 3 yr. Subjects that were exposed to lower water temperatures (0.8–19.4°C) were lighter and shorter than those maintained at higher temperatures (7.8–19.1°C). Furthermore, subjects maintained at lower temperatures had a lower growth rate than those maintained at higher temperatures, except for the interval between the last two measurements. Captive-reared salamanders had lower body-condition indices than wild animals having the same body length during the study period. Captive subjects were 16% and 19% lighter than wild individuals of the same length when maintained in the high- and low- temperature groups, respectively. This study indicates that water temperature affected juvenile growth, and captive-reared *A. davidianus* older than 5 yr had a body-condition index approaching that of individuals in the wild.

### BROWN TREESNAKE MOVEMENTS

B. Lardner et al. [2014, *Copeia* 2014(3):428-436] note that understanding the spatial ecology and foraging strategy of invasive animals is essential for success in control or eradication. They studied movements and activity in juvenile brown treesnakes, *Boiga irregularis*, on Guam, as this population segment has proven particularly difficult to control. Distance between daytime refugia (from telemetry of 18 juveniles, 423–800 mm snout–vent length) ranged from 0 to 118 m ( $n = 86$ ), with a grand mean of 43 m. There were tendencies for shorter snake movements on nights directly following a full moon and on dry nights, but variation among snakes was of a larger magnitude and would greatly reduce chances to detect moon or rain effects unless corrected for. Snake activity was estimated from audio recordings of signals from “tipping” radio transmitters, analyzed for pulse period and amplitude. Activity was highest in the hours immediately after sunset, and gradually declined throughout the night before dropping abruptly in conjunction with sunrise. Snake activity was higher on rainy nights, and tended to be highest during waning moons and when the moon was below the horizon. The authors conclude that small brown treesnakes forage actively and appear to move far enough to regularly encounter the traps and bait used on Guam for control purposes, suggesting that alternative explanations are required for their low capture rates with these control tools.

### HYBRID MAP TURTLES

J. C. Godwin et al. [2014, *Copeia* 2014(4):725-742] note that map turtles, genus *Graptemys*, are highly aquatic and rarely undergo terrestrial movements, and that limited dispersal among drainages has been hypothesized to drive drainage-specific endemism and high species richness of this group in the southeastern United States. Until recently, two members of the megacephalic “*pulchra* clade,” *Graptemys barbouri* and *Graptemys ernsti*, were presumed to be allopatric with a gap in both species' ranges in the Choctawhatchee River drainage. In this paper, the authors analyzed variation in morphology (head and shell patterns) and genetics (mitochondrial DNA and micro-satellite loci) from *G. barbouri*, *G. ernsti*, and *Graptemys* sp. collected from the Choctawhatchee River drainage, and document the syntopic occurrence of those species and back-crossed individuals of mixed ancestry in the Choctawhatchee River drainage. The results provide a first counter-example to the pattern of drainage-specific endemism in megacephalic *Graptemys*. Geologic events associated with Pliocene and Pleistocene sea level fluctuations and the existence of paleo-river systems appear to have allowed the invasion of the Choctawhatchee system by these species, and the subsequent introgression likely predates any potential human-mediated introduction.

### TURTLES IN A FRAGMENTED LANDSCAPE

W. J. B. Anthonysamy et al. [2014, *Copeia* 2014(3):437-446] note that reproductive success is often difficult to ascertain in reptiles because of inconspicuous reproductive behaviors such as courtship that occurs in aquatic habitats and cryptic breeding outcomes such as multiple paternity and sperm storage. The authors corroborated field observations of mating behavior with genetic parentage analysis to assess the mating system and reproductive success in the rare Blanding's turtle (*Emydoidea blandingii*) within a fragmented landscape in Will County, Illinois. During four consecutive years of radio-telemetry monitoring, they observed promiscuous mating behavior among males and females. Parentage was strongly skewed (one male sired 38% of 272 offspring) and multiple paternity was rare (11% of 28 clutches). Both males and females produced offspring with multiple individuals over the course of the study, but parentage did not always correspond with observed mating attempts; only 41% of male mating attempts observed in the field corresponded with sired offspring. For males, number of female mates inferred from paternity analysis was positively correlated with total number of offspring sired. No correlation was found between relatedness of observed mating pairs and hatching success. Repeat paternities in clutches were detected among years, with one confirmed instance of across-season sperm storage. High variation in reproductive success and low levels of multiple paternity in Blanding's Turtle in Will County compared to other areas may be attributed to habitat modification, small population size, and disruption of the mating system.

## AVIAN PREDATION ON SEA TURTLE EGGS

J. Burger and M. Gochfeld [2014, *Copeia* 2014(1):109-122] investigated avian predation on olive ridley (*Lepidochelys olivacea*) sea turtle eggs and hatchlings at the Ostional (Costa Rica) arribada beach. Objectives were to identify avian predators and describe their behavior, examine avian foraging opportunities for obtaining eggs and hatchlings, describe different foraging opportunities, and to examine differences in the time hatchlings were exposed on the sand surface to avian predators as a function of time of day, sand temperature, number of hatchlings emerging at one time, and position in the emergence order (early, middle, or late). The timing of nesting and hatchling emergence, length of the incubation period, and heavy rains provided birds with foraging opportunities. Timing is critical because: 1) females nest in every month, but hatchlings require 45–65 days to hatch, thus nesting females dig up nests from previous nestings, 2) heavy rains increase stream flow, causing bank erosion, exposing nests to avian predators, 3) strong tides expose nests to avian predators, 4) hatchlings emerging in the early morning are visible to birds, and 5) length of time for hatchlings to emerge from the nest and reach the water varies among clutches. Black vultures (*Coragyps atratus*), wood storks (*Mycteria americana*), and great-tailed grackles (*Quiscalus mexicanus*) accounted for most of the avian predation. Vultures foraged by searching for hatchlings on the surface, for eggs or hatchlings exposed by dogs or people, for clusters of birds around emerging hatchlings, and for opportunities to pirate eggs or hatchlings from other birds. Olive ridleys avoid predation by predator swamping, nocturnal nesting, and nocturnal emergence of young. Humans decreased predation on hatchlings by removing debris that impedes hatchling movement to the sea, and by keeping predatory birds off the beach during the main early morning hatchling emergence period.

## BUOYANCY OF COLD-SUBMERGED TURTLES

E. A. Cantrell et al. [2014, *Herpetologica* 70(4):388-394] note that western painted turtles (*Chrysemys picta bellii*) are the most anoxia-tolerant tetrapods known, capable of surviving anaerobically at 3°C for nearly 5 mo. In the northernmost latitudes of their range, adult painted turtles can experience winters lasting 6–7 mo. During this time, the pond surface is covered with ice and snow, denying the turtles access to air and trapping them in water that can become severely hypoxic or anoxic. Previous studies have reported that turtles overwinter near the bottom of ponds, either buried in mud or on top of the substrate, where oxygen levels are hypoxic or anoxic. The oxygen is depleted by other respiring biomass within the mud, but why the turtles are found on or within it is not understood. To better understand the overwintering behavior of painted turtles, the authors conducted a series of laboratory experiments to determine how a turtle's buoyancy is affected by temperature, depth, and access to air. Acclimating turtles to 3°C resulted in a large variation in turtle buoyancy, but preventing access to air caused all turtles to become negatively buoyant. The authors suggest that painted turtles overwinter in the mud or on the pond bottom not necessarily because of any particular behavioral adaptation, but simply because they become negatively buoyant while overwintering without access to air.

## NEW GENUS OF FOSSIL FROGS

L. E. Brown and E. S. Brown [2014, *Life: The Excitement of Biology* 2(3):136-146] describe *Geophryne*, a new genus of fossil frog from the Miocene, Valentine Formation, Barstovian (13–14.5 million years ago) of northern Nebraska in the northern Great Plains USA. This frog was originally described as *Pseudacris nordensis* in 1964. The large, diverse genus *Pseudacris* is composed of 18 other species, all of which are extant. A total of 164 specimens (7 fossils, 114 dry skeletons, 43 cleared and stained specimens) from 17 museums and collections was examined for the new genus and the 18 extant species of *Pseudacris*. Diagnostic characteristics of the ilia differentiate the distinct new fossil genus from all extant species of *Pseudacris*. The new genus is known from three locations in the basin of the Niobrara River. Two extant species (*P. clarkii* and *P. crucifer*) are also known from several fossils of the same stratigraphic horizon as the new genus. Co-occurrence of the new genus with *P. clarkii* and *P. crucifer* in the same horizon clearly indicates that they were markedly distinct 13–14.5 million years ago. The authors propose that the northern Great Plains may have been a center of diversity for terrestrial vertebrates during the Miocene, and discuss models for speciation, the first step in the evolution of a new genus.

## DIAMONDBACK TERRAPINS IN SW LOUISIANA

W. Selman et al. [2014, *Chelonian Conservation and Biology* 13(2):131-139] note that the diamondback terrapin (*Malaclemys terrapin*) is a brackish-water turtle ranging from Texas to Massachusetts, as well as an isolated population on the island of Bermuda. Louisiana likely holds the most available habitat of any state for the species (over 650,000 ha of brackish and salt marshes), yet little is known about terrapin distribution and abundance throughout coastal Louisiana. Knowledge is particularly scant in southwestern Louisiana, where only 12 specimen records exist, the most recent record being from 1972. The authors wanted to determine whether 1) terrapin populations persist in historical collection localities, 2) terrapin populations are present in additional coastal marsh localities, and 3) terrapin abundance differs among sites in southwestern Louisiana. They sampled for diamondback terrapins during 2011–2013 at 16 sites across southwestern Louisiana; all sites were near historical localities or other apparently suitable brackish or salt marsh habitats. They used unbaited fyke nets with 7.6- and 15.2-m leads to capture terrapins and manually searched tidal ponds by airboat. Terrapins (n = 490) were captured at 13 of 16 sample sites, with terrapin site abundance varying considerably (CPUE mean: 1.06 terrapins per net day; CPUE range: 0–7.06). High terrapin abundance was always associated with large expanses of unimpounded brackish and salt marshes, whereas low abundance was typically associated with smaller marsh sizes, channels, or bayous that no longer connected to the Gulf of Mexico, and the presence of crab traps. All sites with terrapin captures represent either a new locality or the first record for a locality in over 40 yrs. The results of this study underscore the continued need for better distribution and abundance data for poorly studied portions of a species' range, especially those that are of conservation concern.

## Unofficial Minutes of the CHS Board Meeting, December 19, 2014

President John Archer called the meeting to order at 7:40 P.M. Board member Jason Hood was absent. The minutes of the November 14 board meeting were read by Mike Dloogatch and accepted.

### Officers' Reports

Treasurer: Andy Malawy gave the financial report for the month of November. Allotment of funds for the 2015 CHS Grants will be deferred until next month.

Membership Secretary: Mike Dloogatch gave the membership report and read off the names of lapsed members. He asked all present to follow up with any lapsed members and encourage renewing. To date, we have 478 members.

Sergeant-at-arms: Attendance at the November general meeting was 33.

Publications Secretary: Aaron LaForge said there was no update. Mike Scott wanted to add AAE to the website calendar. Aaron said it would be done once the dates are given to him.

### Committee Reports

Shows: Molly Carlson discussed upcoming shows that will show up on the CHS website calendar. Molly said that Chauncey is happy to have us at the Fishing / Sportsman's Show since the CHS always pulls in a crowd. We need more volunteers for shows.

Junior herpers: Rich Lamszus reported that at the last meeting there were 30 in attendance. In January, Frank Sladek will be speaking on "Enrichment in the Enclosure" and Colleen Schwarz will be bringing in a box turtle and sulcata for Colleen's Critter Corner. Erica Mede passed her chair position to Rich Lamszus and made Colleen co-chair.

Adoptions: Linda Malawy was not present, but Colleen Schwarz gave an update on animals coming in for adoption soon. The CHS received new large Neodesha enclosures for larger animals and several 40-gallon aquariums. The aquariums may be put into the general meeting raffles.

### Old business

Letters for raffle donations: Erica Mede has had very little success but will be trying again outside of the vendors she solicited originally. John Archer informed the board they can call on behalf of CHS to solicit a donation as well. John requested that he receive copies of any such communications.

December meeting: John Archer noted that the December meeting will be Tuesday, December 30. Teresa Savino volunteered to create a slideshow to play during the holiday meeting. Colleen Schwarz volunteered to pick up food for the meeting to supplement the potluck style celebration. Molly Carlson will help Colleen by looking into Chipotle catering. Mike Scott volunteered to bring ice and Rich Lamszus volunteered to bring soda. Aaron LaForge moved to allocate up to \$300 for the purchase of holiday party food. All in favor, the motion carried.

Storage: Teresa Savino has been looking into storage for CHS supplies and records. Teresa commented that public storage is expensive and that price varies with size and amenities. Teresa will look into these options utilizing our not-for-profit status. She requested that the amount of room we need be defined to help narrow her search.

Bylaws: Nancy Kloskowsi wanted to know what the members at large are supposed to be doing. Rich L. wanted clarification on the duties of vice-president. Concerns about a vice-president not being able to procure speakers for the general meeting were discussed. Mike D. and John A. stated that Jason Hood and Mike D. would be helpful for these issues. Mike D. volunteered to secure the speakers as well. John A. requested a show of hands of those that believe the bylaws as a whole need to be changed. All but Erica M. voted no. Bylaws will remain the same. John A. stated that the society needs an operating procedures manual and appointed Erica M. as chair for this committee. Erica M. selected Mike D. and Dick B. to be on the committee as well.

Grants: Mike D. said that 7 proposals have been received so far.

### New Business

New Reptile Law: John A. spoke with Scott Ballard about the law and there will be no changes until potentially February. The law will be a 65-page PDF available for all to read. John stated that no one on the CHS board is to attempt to interpret the law for others. If there are questions about the law, CHS board members are to recommend the person with the question read the law themselves and call Scott Ballard personally.

Endangered and Threatened Species Permits will be \$50 a year  
Endangered and Threatened Species Breeding Permits will be \$150 a year

14-day Out of State Permit will be \$25

Scientific Permits will be \$25

Venomous reptiles will be defined as any that Brian Grieg Fry considers medically dangerous. Venomous and special use animals must have their enclosures inspected prior to permit approval by Scott Ballard. Scott Ballard can be reached at 618-694-3398 and all are welcome to call with questions regarding the new law.

### Round Table

Teresa S. Is excited that daughter Rosalie is coming home for the holidays.

Dick Buchholz reported that he recently met a blogger who loves the CHS.

Molly Carlson was recently called a "burrito wizard" at her Chipotle workplace.

Brandon Ottolino still has baby water snakes that need homes.

Meeting adjourned at 9:38 P.M.

*Respectfully submitted by Erica Mede*

## Advertisements

For sale: **highest quality frozen rodents.** I have been raising rodents for over 30 years and can supply you with the highest quality mice available in the U.S. These are always exceptionally clean and healthy with no urine odor or mixed in bedding. I feed these to my own reptile collection exclusively and so make sure they are the best available. All rodents are produced from my personal breeding colony and are fed exceptional high protein, low fat rodent diets; no dog food is ever used. Additionally, all mice are flash frozen and are separate in the bag, not frozen together. I also have ultra low shipping prices to most areas of the U.S. and can beat others shipping prices considerably. I specialize in the smaller mice sizes and currently have the following four sizes available: Small pink mice (1 day old—1 gm) , \$25 /100; Large pink mice (4 to 5 days old—2 to 3 gm), \$27.50 /100; Small fuzzy mice (7 to 8 days old—5 to 6 gm) , \$30/100; Large fuzzy mice / hoppers (10 to 12 days old—8 to 10 gm), \$35/100 Contact Kelly Haller at 785-234-3358 or by e-mail at [kelhal56@hotmail.com](mailto:kelhal56@hotmail.com)

For sale: Captive-bred Rosy Boas. Forty-year C.H.S. member is selling 2011 and 2013 healthy and excellent feeding offspring. Special “cheap” prices to C.H.S. members. Arrangements can be made for delivery to southern Wisconsin or northern Illinois. Phone (608) 427-3864 or email [zartenfour@mwt.net](mailto:zartenfour@mwt.net).

For sale: Standard 24" Neodesha reptile cages, 3 × 6" vent on top, tempered glass front. Like new condition, no burns or stains, original glass. These cages do not have the dam (horizontal molding that crosses the entire front width of the cage, used to hold back bedding material)—easier to clean without the dam. About 20 currently available, \$45 each. Linda Malawy, (630) 717-9955, [linda\\_malawy@hotmail.com](mailto:linda_malawy@hotmail.com)

For sale: High quality, all locally captive-hatched tortoises, all bred and hatched here in the upper Midwest. Baby leopards, Sri Lankan stars, and pancakes usually available, and are all well-started and feeding great! Leopards are \$125 ea., Sri Lankans (2012 hatched) \$475 ea. And Pancakes are \$195 ea. Leopards for out of state sale/shipping require a veterinary health certificate (inquire for cost). E-mail at [KKranz1@wi.rr.com](mailto:KKranz1@wi.rr.com) or call Jim or Kirsten at 262 654 6303.

Herp tours: **Costa Rica herping adventures.** Join a small group of fellow herpers for 7 herp-filled days. We find all types of herps, mammals, birds and insects, but our target is snakes. We average 52 per trip, and this is our 10th year doing it. If you would like to enjoy finding herps in the wild and sleep in a bed at night with air-conditioning, hot water and only unpack your suitcase once, instead of daily, then this is the place to do it. Go to our web-site <http://hiss-n-things.com> and read the highlights of our trips. Read the statistics of each trip and visit the link showing photos of the 40 different species we have found along the way. E-mail at [jim.kavney@gmail.com](mailto:jim.kavney@gmail.com) or call Jim Kavney, 305-664-2881.

Line ads in this publication are run free for CHS members — \$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to [mdloogatch@chicagoherp.org](mailto:mdloogatch@chicagoherp.org).

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**Chicago Herpetological Society**  
**Income Statement: January 1 – December 31, 2014**

| <b>Income</b>                   |                    | <b>Expense</b>                     |                    |
|---------------------------------|--------------------|------------------------------------|--------------------|
| <b>Adoptions</b>                | <b>\$ 554.00</b>   | <b>Adoptions</b>                   | <b>\$ 336.21</b>   |
| <b>Grants</b>                   | <b>4,226.00</b>    | <b>Grants</b>                      | <b>11,280.00</b>   |
| <b>Membership dues</b>          | <b>11,911.37</b>   | <b>Bulletin printing / mailing</b> | <b>12,312.31</b>   |
| <b>ReptileFest</b>              | <b>46,231.27</b>   | <b>ReptileFest</b>                 | <b>24,391.46</b>   |
| <b>Other CHS shows</b>          | <b>350.00</b>      | <b>Other CHS shows</b>             | <b>13.00</b>       |
| <b>CHS group trip</b>           | <b>1,453.00</b>    | <b>CHS group trip</b>              | <b>2,525.00</b>    |
| <b>Merchandise sales</b>        | <b>420.00</b>      | <b>Cost of merchandise</b>         | <b>.00</b>         |
| <b>Junior herpers</b>           | <b>973.00</b>      | <b>Junior herpers</b>              | <b>516.16</b>      |
| <b>Interest</b>                 | <b>55.17</b>       | <b>Awards</b>                      | <b>323.38</b>      |
| <b>Donations (unrestricted)</b> | <b>690.72</b>      | <b>Library</b>                     | <b>122.98</b>      |
| <b>Bulletin back issues</b>     | <b>50.00</b>       | <b>Rent (storage)</b>              | <b>325.00</b>      |
| <b>Bulletin ads</b>             | <b>225.00</b>      | <b>Bank / PayPal / Square fees</b> | <b>160.18</b>      |
| <b>Raffle</b>                   | <b>818.00</b>      | <b>Donations (conservation)</b>    | <b>3,530.00</b>    |
| <b>Miscellaneous</b>            | <b>.49</b>         | <b>Liability Insurance</b>         | <b>3,455.00</b>    |
|                                 |                    | <b>Equipment and supplies</b>      | <b>1,016.65</b>    |
|                                 |                    | <b>Licenses and Permits</b>        | <b>141.00</b>      |
|                                 |                    | <b>Postage</b>                     | <b>1,665.88</b>    |
|                                 |                    | <b>Membership related</b>          | <b>464.65</b>      |
|                                 |                    | <b>Speaker reimbursement</b>       | <b>2,320.58</b>    |
|                                 |                    | <b>Telephone</b>                   | <b>131.39</b>      |
| <b>Total Income</b>             | <b>\$67,958.02</b> | <b>Total Expense</b>               | <b>\$65,030.83</b> |

**Net Income \$2,927.19**

**Chicago Herpetological Society**  
**Balance Sheet: December 31, 2014**

**Assets**

|                           |                    |
|---------------------------|--------------------|
| <b>Checking</b>           | <b>\$ 3,931.69</b> |
| <b>Money market</b>       | <b>65,551.31</b>   |
| <b>PayPal</b>             | <b>1,548.90</b>    |
| <b>Postage on deposit</b> | <b>128.75</b>      |

|                     |                           |
|---------------------|---------------------------|
| <b>Total Assets</b> | <b><u>\$71,160.65</u></b> |
|---------------------|---------------------------|

**Equity**

|                               |                    |
|-------------------------------|--------------------|
| <b>Restricted – Adoptions</b> | <b>\$ 6,469.64</b> |
| <b>Restricted – Grants</b>    | <b>610.10</b>      |
| <b>Retained Earnings</b>      | <b>61,153.72</b>   |
| <b>Net Income</b>             | <b>2,927.19</b>    |

|                     |                           |
|---------------------|---------------------------|
| <b>Total Equity</b> | <b><u>\$71,160.65</u></b> |
|---------------------|---------------------------|

## UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, January 28, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Erica Mede**, a certified veterinary technician from Chicago Exotics Animal Hospital, will speak about “Reptile and Amphibian Emergencies.”

A speaker has not yet been confirmed for the February 25 meeting. Details will be posted on [www.chicagoherp.org](http://www.chicagoherp.org) when they become available.

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago’s newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

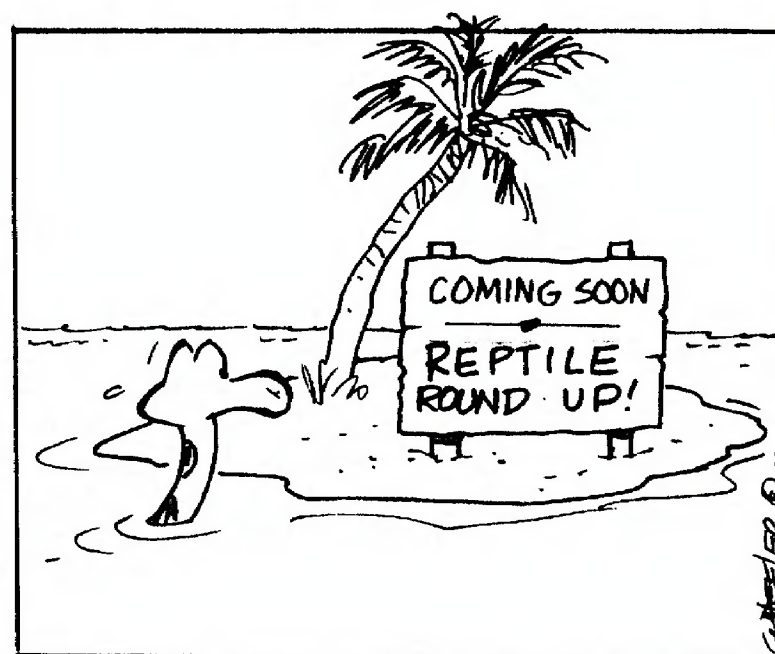
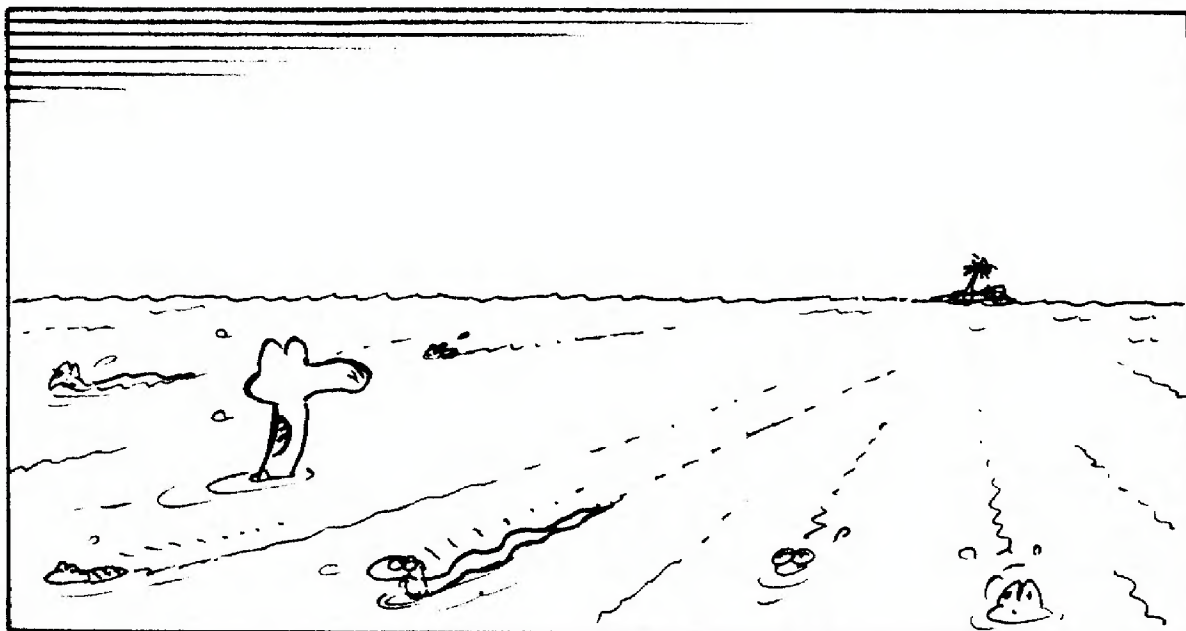
### Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., Friday, February 13, 2015, at the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg.

### The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the group’s Facebook page.

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# CHICAGO HERPETOLOGICAL SOCIETY

*Affiliated with the Chicago Academy of Sciences*

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